Listing of Claims:

1. (original) A composition for use in preparation of multi-block copolymers comprising the admixture or reaction product resulting from combining:

(A) a first olefin polymerization catalyst,

(B) a second olefin polymerization catalyst capable of preparing polymers differing in chemical or physical properties from the polymer prepared by catalyst (A) under equivalent polymerization conditions, and

(C) a chain shuttling agent capable of transferring polymer fragments under polymerization conditions between the active catalyst sites of catalysts (A) and (B).

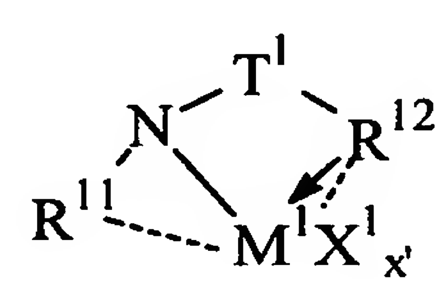
2. (original) A composition according to claim 1 wherein catalyst (B) has a comonomer incorporation index less than the comonomer incorporation index of catalyst (A).

3. (original) A composition according to claim 1 wherein the shuttling agent is an aluminum, zinc or gallium compound containing at least one hydrocarbyl substituent having from 1 to 12 carbons.

4. (original) A catalyst composition according to claim 3 wherein the shuttling agent is a dialkylzinc compound.

5. (original) A composition according to claim 1 wherein catalyst (A) comprises a complex comprising a transition metal selected from Groups 4-8 of the Periodic Table of the Elements and one or more delocalized, π-bonded ligands or polyvalent Lewis base ligands.

6. (original) A composition according to claim 5 wherein catalyst (A) corresponds to the formula:



wherein:

R^{11} is selected from alkyl, cycloalkyl, heteroalkyl, cycloheteroalkyl, aryl, and inertly substituted derivatives thereof containing from 1 to 30 atoms not counting hydrogen or a divalent derivative thereof;

T^1 is a divalent bridging group of from 1 to 41 atoms other than hydrogen; and

R^{12} is a C_{5-20} heteroaryl group containing Lewis base functionality;

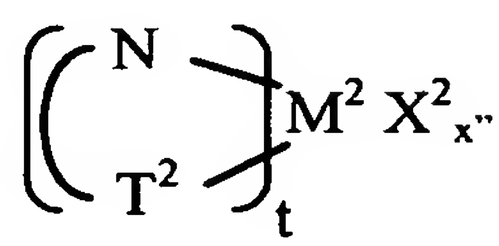
M^1 is a Group 4 metal;

X^1 is an anionic, neutral or dianionic ligand group;

x' is a number from 0 to 5 indicating the number of such X^1 groups; and

bonds, optional bonds and electron donative interactions are represented by lines, dotted lines and arrows respectively.

7. (original) A composition according to claim 8 wherein catalyst (B) corresponds to the formula:



wherein

M^2 is a metal of Groups 4-10 of the Periodic Table of the elements;

T^2 is a nitrogen, oxygen or phosphorus containing group;

X^2 is halo, hydrocarbyl, or hydrocarbyloxy;

t is one or two;

x" is a number selected to provide charge balance;

and T^2 and N are linked by a bridging ligand.

8. (original) A process for preparing a multi-block copolymer comprising contacting one or more addition polymerizable monomers under addition polymerization conditions with a composition according to claim 1.

9. (original) A multi-block copolymer preparable by the process of claim 8 comprising in polymerized form ethylene and one or more copolymerizable comonomers, said copolymer containing therein two or more segments or blocks differing in comonomer content, crystallinity, density, melting point or glass transition temperature.

10. (original) A multi-block copolymer preparable by the process of claim 8 having at least one melting point, T_m, in degrees Celcius and density, d*, in grams/cubic centimeter, wherein the numerical values of the variables correspond to the relationship:

$T_m > -2002.9 + 4538.5(d^*) - 2422.2(d^*)^2$, and wherein the interpolymer has a M_w/M_n from 1.7 to 3.5.

11. (original) A multi-block copolymer preparable by the process of claim 8 having a Mw/Mn from 1.7 to 3.5,

a delta quantity (tallest DSC peak minus tallest CRYSTAF peak) greater than the quantity, y*, defined by the equation:

$y^* > -0.1299(\Delta H) + 62.81$,

and a heat of fusion up to 130 J/g,

wherein the CRYSTAF peak is determined using at least 5 percent of the cumulative polymer, and if less than 5 percent of the polymer has an identifiable CRYSTAF peak, then the CRYSTAF temperature is 30°C, and ΔH is the numerical value of the heat of fusion in J/g.

12. (original) A multi-block copolymer preparable by the process of claim 8 having a tensile strength above 10 MPa and an elongation at break of at least 600 percent at a crosshead separation rate of 11 cm/minute.

13. (original) A multi-block copolymer preparable by the process of claim 8 having a delta quantity (tallest DSC peak (measured from the baseline) minus tallest CRYSTAF peak) greater than 48°C and a heat of fusion greater than or equal to 130 J/g, wherein the CRYSTAF peak is determined using at least 5 percent of the cumulative polymer, and if less than 5 percent of the polymer has an identifiable CRYSTAF peak, then the CRYSTAF temperature is 30°C.

14. (original) A multi-block copolymer preparable by the process of claim 8 having a storage modulus ratio, G'(25°C)/G'(100°C) of from 1 to 50 and a 70°C compression set of less than 80 percent.

15. (original) A multi-block copolymer preparable by the process of claim 8 having a heat of fusion of less than 85 J/g and a pellet blocking strength of equal to or less than 100 lbs/ft^2 (4800 Pa).

16. (original) An uncrosslinked, elastomeric, multi-block copolymer preparable by the process of claim 8 comprising in polymerized form at least 50 mole percent ethylene, having a 70°C compression set of less than 80 percent.

17. (original) A multi-block copolymer preparable by the process of claim 8, containing a single crystalline melting point (Tm) as measured by DSC.

18. (original) A multi-block copolymer preparable by the process of claim 8, having a thermomechanical analysis penetration depth of 1 mm at a temperature of at least 90°C, and a flexural modulus of from 3 kpsi (20 MPa) to 13 kpsi (90 MPa).

19. (original) A multi-block olefin colymer according to claim 18 having a thermomechanical analysis penetration depth of 1 mm at a temperature of at least 90°C, and a flexural modulus of from 3 kpsi (20 MPa) to 13 kpsi (90 MPa).

20. (original) A multi-block copolymer preparable by the process of claim 8, having an abrasion resistance volume loss according to ISO 4649 of less than 90 mm^3.

21. (original) A multi-block copolymer according to claim 18 having an abrasion resistance volume loss according to ISO 4649 of less than 90 mm^3.

22. (original) A multi-block copolymer preparable by the process of claim 8, having an abrasion resistance volume loss according to ISO 4649 of less than 90 mm^3 and having a storage modulus, G', such that log (G') is greater than or equal to 0.4 MPa, at a temperature of 100°C.

23. (original) A multi-block copolymer according to claim 18 having an abrasion resistance volume loss according to ISO 4649 of less than 90 mm^3 and having a storage modulus, G', such that log (G') is greater than or equal to 0.4 MPa at a temperature of 100°C.

24. (original) A multi-block copolymer according to claim 20 having a storage modulus, G', such that log (G') is greater than or equal to 1.0 MPa, at a temperature of 100°C.

25. (original) A multi-block copolymer according to claim 21 having a storage modulus, G', such that log (G') is greater than or equal to 1.0 MPa, at a temperature of 100°C.

26. (original) A crosslinked derivative of a multi-block copolymer according to any one of claims 9-25, or preparable by the method of claim 8.

27. (original) A multi-block copolymer according to any one of claims 9-25, or preparable by the method of claim 8, or a composition comprising the same in the form of a film, at least one layer of a multilayer film, at least one layer of a laminated article, a foamed article, a fiber, a nonwoven fabric, an injection molded article, a blow molded article, a roto-molded article, or an adhesive.